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St. Louis, Missouri 63141

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February 5, 2014

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

Re: Route 3 Drum Site Groundwater Monitoring Program
4th Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Route 3 Drum Site Groundwater Monitoring Program 4th Quarter 2013 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. The scope of monitoring after the February 2014 event will depend on US EPA's response to the "Evaluation of 3Q08 - 3Q13 Data" that Solutia submitted on January 13, 2014.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@eastman.com

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Route 3 Drum Site Groundwater Monitoring Program
4th Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

Stephanie Linebaugh
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

Solutia

Donn Haines 500 Monsanto Avenue, Sauget, IL 62206-1198

4TH[D] QUARTER 2013
DATA REPORT

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING

SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

January 2014

URS Corporation
1001 Highland Plaza Drive West
Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562962.00003

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1.0 INTRODUCTION

Solutia Inc. (Solutia) is conducting groundwater monitoring activities as outlined in the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia, 2008). The Illinois Route 3 Drum Site (Site) is an area associated with the Solutia W.G. Krummrich (WGK) Facility located in Sauget, Illinois that is subject to a RCRA Administrative Order on Consent (AOC) entered into by the U.S. EPA and Solutia on May 3, 2000. This report presents the results of the sampling event completed in 4th Quarter 2013 (4Q13). The Site is located in the area identified as "Lot F" in **Figure 1**.

During the 4Q13 sampling event, groundwater samples were collected from two Shallow Hydrogeologic Unit (SHU) monitoring wells, designated GM-31A and GM-58A (**Figure 2**), located hydraulically downgradient of the Site**.** Samples from each well were analyzed for select semivolatile organic compounds (SVOCs) using EPA Method 8270D. In addition, samples were collected from both wells for evaluation of monitored natural attenuation (MNA). The types of natural attenuation processes active at the site will be determined by measurements of the following key geochemical parameters: alkalinity, carbon dioxide, chloride, dissolved oxygen (DO), ferrous iron, total and dissolved iron, total and dissolved manganese, methane, nitrate, sulfate, total and dissolved organic carbon, and oxidation-reduction potential (ORP).

2.0 FIELD PROCEDURES

URS Corporation (URS) personnel collected groundwater level measurements on October 30, 2013 and conducted the 4Q13 Illinois Route 3 Drum Site groundwater sampling on November 1, 2013[1]. Groundwater samples were collected from two monitoring wells during the 4Q13 sampling event. This section summarizes the field investigative procedures.

Groundwater Level Measurements - An oil/water interface probe was used to measure depth to static groundwater levels and the thickness of non-aqueous phase liquid (NAPL) if present, to 0.01 feet. Depth-to-groundwater measurements for the 4Q13 sampling event are presented in **Table 1**. NAPL was not detected in either of the monitoring wells.

Groundwater Sampling - Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump (GM-31A) or peristaltic pump (GM-58A), and was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of approximately 400 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

[1] The October 30 gauging was part of a comprehensive event which included monitoring wells associated with other WGK programs. Groundwater levels in the subject wells were gauged again on November 1 prior to sampling.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every two minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-through cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
pH	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-through cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed. Bottles were filled in the following order:

- Gas Sensitive Parameters (e.g., carbon dioxide, methane)
- Semivolatile Organic Compounds (SVOCs)
- General Chemistry (i.e., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, total and dissolved organic carbon, and ferrous iron)

Samples for analysis of ferrous iron, dissolved iron, dissolved organic carbon, and dissolved manganese were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F (0.2)” in the sample nomenclature.

Quality Assurance/Quality Control (QA/QC) samples consisting of analytical duplicates (AD) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. One duplicate and one MS/MSD sample were collected. Additionally, one equipment blank was collected and analyzed.

Each sample was labeled immediately following collection. The sample identification system used for each sample involved the following nomenclature “GM-##A-MMYY-QAC” where:

- **GM-##A** – Geraghty & Miller (GM) monitoring well location and number
- **MMYY** – Month and year of sampling quarter, e.g.: November (4th Quarter), 2013 (1113)
- **QAC** – denotes QA/QC samples (when applicable):
  - **AD** – analytical duplicate
  - **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, analysis requested/comments, and sampler signature/date/time, with permanent ink on a chain-of-custody (COC). Coolers were sealed between the lid and sides with a custody seal, and then shipped to TestAmerica Laboratories, Inc. in Savannah, Georgia (TestAmerica) by means of overnight delivery service. Sampling data forms are included in **Appendix A**. A copy of the COC form is included in **Appendix B**.

Field personnel and equipment were decontaminated to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with a Liquinox® or equivalent detergent wash, a potable water rinse, and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica Savannah for certain 40 CFR 264 Appendix IX SVOCs, and MNA parameters per the Route 3 Drum Site O&M Plan (Solutia 2008), using the following methodologies:

- SVOCs, via USEPA SW-846 Method 8270D - The constituents of concern (COCs) identified by the USEPA are biphenyl, 2,4-dichlorophenol, dinitrochlorobenzene, nitrobenzene, 2-nitrobiphenyl, 3-nitrobiphenyl, 4-nitrobiphenyl, 2-nitrochlorobenzene, 3-nitrochlorobenzene, 4-nitrochlorobenzene, pentachlorophenol, and 2,4,6-trichlorophenol.
- MNA parameters consisting of alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron and manganese (6010C), dissolved organic carbon (415.1), nitrate (353.2), sulfate (375.4), dissolved gases (RSK 175), and total organic carbon (TOC) (415.1).

Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness as described in the Revised Illinois Route 3 Drum Site Operations and Maintenance Plan. Data qualifiers were added, as

appropriate, and are included on the data tables and the laboratory report. The Quality Assurance report is included as **Appendix C**. The laboratory report along with the data review report is included in **Appendix D**.

A total of five groundwater samples (two investigative groundwater samples, one field duplicate pair, and one MS/MSD pair) were collected. All samples requested for analyses were analyzed by TestAmerica for SVOCs and MNA parameters by USEPA SW-846 Methods. Additionally, one equipment blank was collected and analyzed by Test America. The results for the various analyses were submitted as sample delivery group (SDG) KOM022.

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2010) and the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan, (Solutia 2008). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for this SDG to meet the project objectives. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100 percent.

5.0 OBSERVATIONS

SVOCs were detected in groundwater samples collected from monitoring wells GM-31A and GM-58A during the 4Q13 sampling event. 2-Chloronitrobenzene/4-Chloronitrobenzene was detected at concentrations of 54/55 µg/L (GM-31A and duplicate) and 30 µg/L (GM-58A). GM-31A and its duplicate sample also contained 2-Nitrobiphenyl (48/52 µg/L) and estimated detections of 2,4,6-Trichlorophenol (230/230 µg/L) and Nitrobenzene (20/20 µg/L). Each of these constituents have been detected in previous sampling events at similar concentrations. A summary of SVOC detections is provided in **Table 2**, with MNA results provided in **Table 3**.

6.0 REFERENCES

Solutia Inc., 2008. Revised Illinois Route 3 Drum Site Operation and Maintenance Plan, W.G. Krummrich Facility, Sauget, IL, May 2008.

U.S. Environmental Protection Agency (USEPA), 2010. Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review.

U.S. Environmental Protection Agency (USEPA), 2008 National Functional Guidelines for Superfund Organic Methods Data Review.

Figures

FALLING SPRINGS ROAD

STERLING STEEL

SITE H

SITE L

SITE M

SITE N

SITE I

DEAD CREEK

SITE G

CONTAINMENT CELL

CERRO COPPER

QUEENY AVENUE

ROUTE 3

AFTON CHEMICAL

MONSANTO AVENUE

W. G. KRUMMRICH FACILITY

MIDWEST RUBBER

BIG RIVER ZINC

ROUTE 3

CENTER ETHANOL COMPANY, LLC

LOT F

SITE O

PHILLIPS PETROLEUM

SITE P

AMEREN

PCHEM POTW

AMERICAN BOTTOMS POTW

SITE S

CLAYTON CHEMICAL

VEOLIA INCINERATION

KINDER MORGAN

SITE R

SITE Q

GROUNDWATER PUMPING WELLS

BARRIER WALL

MISSISSIPPI RIVER

LEGEND

W.G. KRUMMRICH FACILITY

SAUGET AREA #1

SAUGET AREA #2

0 1000

SCALE FEET

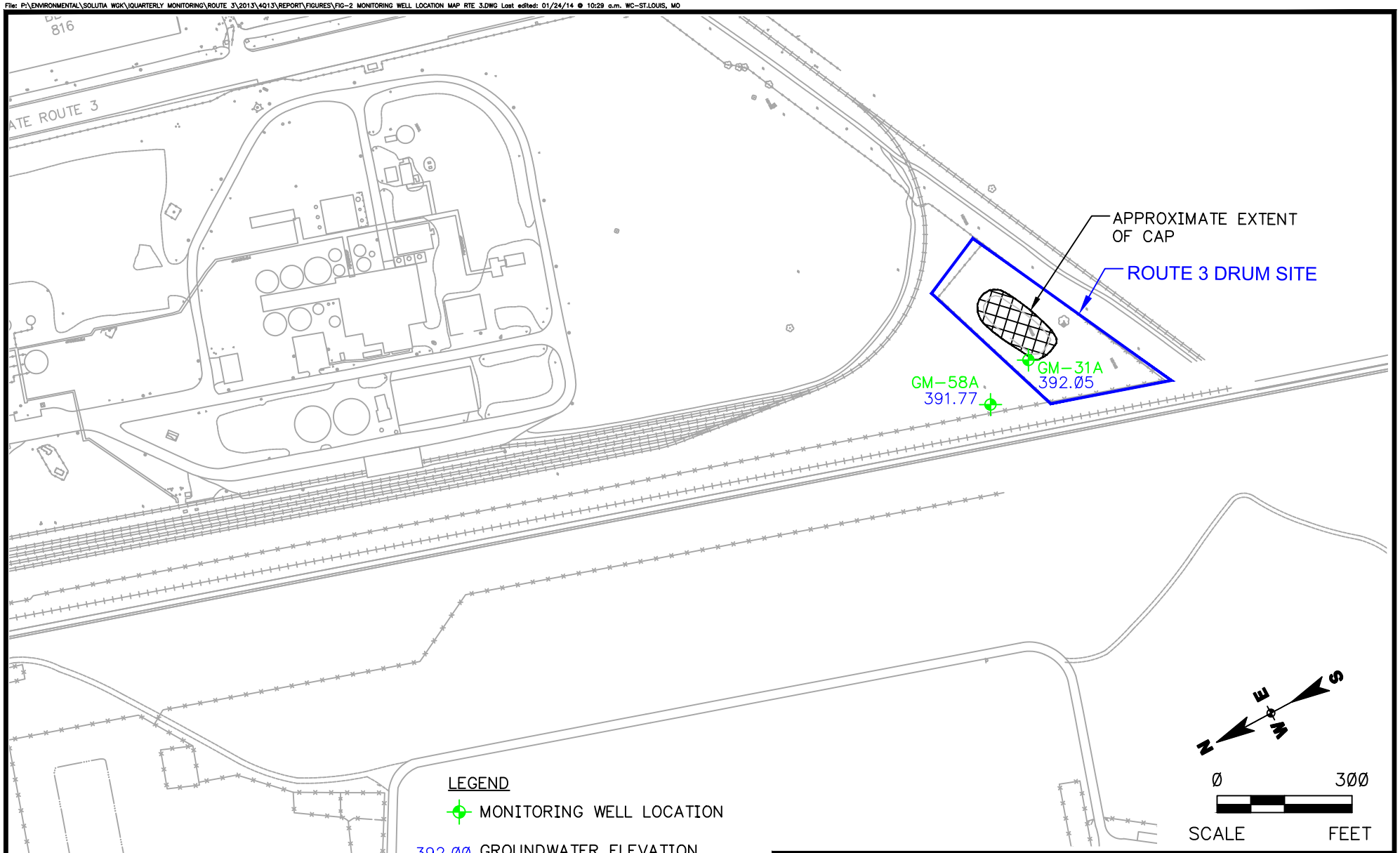
File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2013\4Q13\REPORT\FIGURES\FIG-1 SITE LOCATION MAP.DWG Last edited: JAN. 20, 14 @ 3:15 p.m. by: curt_smith

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562962

URS

DRN. BY:djd January 2014 DSGN. BY: nm CHKD. BY: nm	Site Location Map	FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2013\4Q13\REPORT\FIGURES\FIG-2 MONITORING WELL LOCATION MAP RTE 3.DWG Last edited: 01/24/14 @ 10:29 a.m. WC-ST.LOUIS, MO



LEGEND

MONITORING WELL LOCATION

392.00 GROUNDWATER ELEVATION (FT NAVD)

NOTES:

1. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562962
URS		
DRN. BY:djd January 2014 DSGN. BY: nm CHKD. BY: nm	Monitoring Well Location and Groundwater Elevation Map	FIG. NO. 2

Tables

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						October 30, 2013			
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)										
GM-31A	416.63	418.63	19	39	397.63	377.63	26.58	-	40.46	392.05
GM-58A	412.24	414.24	19.4	39.4	392.84	372.84	22.47	-	40.86	391.77

Notes:

* - Elevation based upon North American Vertical Datum (NAVD) 88 datum

** - Total depths are measured annually during the first quarter of each year

bgs - below ground surface

btoc - below top of casing

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	1,1'-Biphenyl (ug/L)	1-Chloro-2,4-Dinitrobenzene (ug/L)	2,4,6-Trichlorophenol (ug/L)	2,4-Dichlorophenol (ug/L)	2-Chloronitrobenzene/ 4-Chloronitrobenzene (ug/L)	2-Nitrobiphenyl (ug/L)	3,4-Dichloronitrobenzene (ug/L)	3-Nitrobiphenyl (ug/L)	3-Nitrochlorobenzene (ug/L)	4-Nitrobiphenyl (ug/L)	Nitrobenzene (ug/L)	Pentachlorophenol (ug/L)
Shallow Hydrogeologic Unit (SHU 395-380 ft NAVD 88)													
GM-31A-1113	11/1/2013	<19	<19	**230 J**	<19	**54**	**48**	<19	<19	<19	<19	**20 J**	<97
GM-31A-1113-AD	11/1/2013	<19	<19	**230 J**	<19	**55**	**52**	<19	<19	<19	<19	**20 J**	<95
GM-58A-1113	11/1/2013	<9.6	<9.6	<9.6	<9.6	**30**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<48

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given.
BOLD indicates concentration greater than reporting limit.
AD = Analytical Duplicate
J = Estimated value

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)																		
GM-31A-1113	11/1/2013	440	45	51	0.15	<1.1	<1		0.38		1.9		46	0.89	230	5.4		75.94
GM-31A-F(0.2)1113	11/1/2013							<0.03		<0.05		2					5.6 J	
GM-58A-1113	11/1/2013	370	32	40	0.02	<1.1	<1		0.077		1.2		0.95	1.9 J	210	3.1		195.32
GM-58A-F(0.2)-1113	11/1/2013							<0.03		<0.05		1.2					3.1	

Notes:
DO and ORP were measured in the field using a In-Situ Troll 9500 equipped with a flow-thru cell. Values presented represent final measurements before sampling.
Ferrous Iron readings were measured in the field using a Hach DR-890 Colorimeter after the groundwater passed through a 0.2 µm filter
F(0.2) = Sample was filtered utilizing a 0.2 µm filter during sample collection
mg/L = milligrams per liter
ug/L = micrograms per liter
mV = millivolts
J = Concentration is an approximate value
< = Result is non-detect, less than the reporting limit given
A blank space indicates sample not analyzed for select analyte

Appendix A

Groundwater Purging and Sampling Forms

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/01/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - RT 3

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	44.32 [ft]
Pump placement from TOC	31 [ft]

Well Information:

Well Id	GM-31A
Well diameter	2 [in]
Well total depth	40.46 [ft]
Depth to top of screen	21 [ft]
Screen length	240 [in]
Depth to Water	26.65 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	847.1 [mL]
Calculated Sample Rate	128 [sec]
Sample rate	128 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:35:53	60.73	6.66	1430.34	42.72	0.16	76.07
	11:38:05	60.74	6.66	1432.34	37.25	0.16	75.90
	11:40:18	60.74	6.66	1437.34	43.19	0.15	75.43
	11:42:31	60.75	6.66	1435.42	43.31	0.14	75.94
	11:44:44	60.81	6.66	1433.62	45.61	0.15	75.94
Variance in last 3 readings	11:40:18	0.00	0.00	4.99	5.94	-0.01	-0.47
	11:42:31	0.01	0.00	-1.92	0.12	0.00	0.51
	11:44:44	0.06	0.00	-1.79	2.30	0.00	0.00

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/01/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - RT 3

Pump Information:

Pump Model/Type	Peristaltic
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	50.58 [ft]
Pump placement from TOC	31.4 [ft]

Well Information:

Well Id	GM-58A
Well diameter	2 [in]
Well total depth	40.86 [ft]
Depth to top of screen	21.4 [ft]
Screen length	240 [in]
Depth to Water	22.56 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	882.01 [mL]
Calculated Sample Rate	133 [sec]
Sample rate	133 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	9:41:10	58.57	6.82	1088.15	0.97	0.05	196.85
	9:43:28	58.58	6.82	1115.74	0.86	0.04	196.56
	9:45:45	58.59	6.81	1137.69	1.70	0.03	196.26
	9:48:03	58.60	6.81	1154.02	3.23	0.02	195.75
	9:50:20	58.62	6.81	1166.19	5.33	0.02	195.32
Variance in last 3 readings	9:45:45	0.01	0.00	21.96	0.83	-0.01	-0.30
	9:48:03	0.01	0.00	16.33	1.53	-0.01	-0.51
	9:50:20	0.02	0.00	12.17	2.10	-0.01	-0.43

Notes:

Appendix B

Chain-of-Custody

Serial Number 76235

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Solutia WGK 4Q13		IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Bob Billman	314-429-0100	
CLIENT NAME	CLIENT E-MAIL	
URS	bob.billman@urs.com	
CLIENT ADDRESS		
1001 Highlands Plaza Dr. W. Ste. 300 St. Louis, MO 63110		
COMPANY CONTRACTING THIS WORK (if applicable)		
Solutia		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ⊗
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: SVOC 8270C / Ice	Total Fe/Mn 6010B / HNO_3	Alk/CO_2 310.1 / Ice	Chloride 325.2, Sulfate 375.4 / Ice	Methane RSK 175 / HCl	Nitrate 353.2 / H_2SO_4, Ice	TOC 415.1 / HCl	Dissolved Fe/Mn 6010B / HNO_3	DOC 415.1 / HCl	NUMBER OF CONTAINERS SUBMITTED	REMARKS
11/01/13	1000	GM-58A-1113	G	X				2	1	1	1	3	2	1				
	1000	GM-58A-f(0.2)-1113	G	X											1	1		
	1000	GM-58A-1113-MS	G	X				2										
	1000	GM-58A-1113-MSD	G	X				2										
	1150	GM-31A-1113	G	X				2	1	1	1	3	2	1				
	1150	GM-31A-f(0.2)-1113	G	X											1	1		
	1150	GM-31A-1113-AD	G	X				2										
	1220	GM-31A-1113-EB	G	X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	11/1/13	1300						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		ATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABOI
	11/22/13	0848	YES ○ NO ○		95758	

680-95758 Chain of Custody

1.0/2.6°C

TAL8240-680 (1008)

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Illinois Route 3 Drum Site
4th Quarter 2013 Data Report

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141

January 2014

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562962

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in November 2013 at the Illinois Route 3 Drum Site on the Solutia W.G. Krummrich Facility as part of the 4th Quarter 2013 sampling event. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Samples were analyzed for certain semivolatile organic compounds (SVOCs) and monitored natural attenuation (MNA) parameters.

One hundred percent of the data were subjected to a data quality review (Level III validation). The Level III review was performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use. A total of five samples (two investigative groundwater samples, one field duplicate, and one matrix spike and matrix spike duplicate (MS/MSD) pair) were collected. Additionally, one equipment blank was collected and analyzed by Test America. All samples requested for analyses were analyzed by TestAmerica for SVOCs and MNAs by the following USEPA SW-846 Methods:

USEPA SW-846 Method 8270D for SVOCs

Samples were also analyzed for MNA parameters by the following methods:

- Method RSK-175 for Dissolved Gases (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Carbon Dioxide
- USEPA Method 325.2 for Chloride
- USEPA Method 6010C for Total and Dissolved Iron and Manganese
- USEPA Method 415.1 for Total and Dissolved Organic Carbon
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2010).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed.

The various qualifiers are explained in **Tables 1** and **2** below:

TABLE 1 Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F	MS, MSD: Spike recovery exceeds upper or lower control limits.
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

TABLE 2 URS Data Qualifiers

URS Qualifier	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) values was 100 percent, which meets the completeness goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Data package completeness
- Laboratory case narrative/cooler receipt form and sample holding times
- Laboratory method blanks
- Laboratory control sample (LCS) recoveries
- Surrogate spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and Relative Percent Difference (RPD) values
- Internal standard (IS) recoveries
- Laboratory Duplicate results
- Field duplicate results
- Results reported from dilutions
- Additional qualifications

Inorganics/General chemistry

- Data package completeness
- Laboratory case narrative/cooler receipt form and sample holding times
- Laboratory method blank
- LCS recoveries
- MS/MSD sample recoveries and matrix duplicate RPD values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions
- Additional qualifications

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

Extractions and/or analyses were completed within the recommended holding time requirements.

The cooler receipt form indicated that one of two coolers was received by the laboratory at a temperature of 1.0°C which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The pH for dissolved organic carbon in sample GM-31A-F(0.2)-1113 was out of range upon receipt; please see section 10.0 of this Quality Assurance Report for qualifications.

3.0 LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. Laboratory method blank samples were analyzed at the method prescribed frequencies. Method blank samples were non-detect for all target analytes.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. The equipment blank sample was non-detect.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. Samples analyzed for SVOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria.

Surrogate recoveries were within evaluation criteria, with the exception summarized in the following table.

Sample ID	Parameter	Surrogate	Recovery	Criteria
LCS 680-301653/21-A	SVOCs	2-Fluorobiphenyl	**9**	38-130
LCS 680-301653/21-A	SVOCs	2-Fluorophenol	**3**	25-130
LCS 680-301653/21-A	SVOCs	Nitrobenzene-d_5	**3**	39-130
LCS 680-301653/21-A	SVOCs	Phenol-d_5	**5**	25-130

Surrogates that were associated with quality control samples did not require qualification. No qualifications of data were required due to surrogate recoveries.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Laboratory control samples (LCS) are analyzed with each analytical batch to assess the accuracy of the analytical process. All spiked LCS recoveries were within evaluation criteria, with the exception summarized in the following table.

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	LCS/ LCSD RPD	LCS/LCSD /RPD Criteria
LCS 680-301653/21/22-A	SVOCs	1,1'-Biphenyl	**11**/76	**149**	54-130/50
LCS 680-301653/21/22-A	SVOCs	2,4-Dichlorophenol	**5**/83	**179**	54-130/50
LCS 680-301653/21/22-A	SVOCs	Nitrobenzene	**4**/83	**184**	56-130/50
LCS 680-301653/21/22-A	SVOCs	2,4,6-Trichlorophenol	**16**/86	**137**	57-130/50

Analytical data that required qualification based on LCS data are included in the following table.

Sample ID	Parameter	Analyte	Qualification
GM-58A-1113	SVOCs	1,1'-Biphenyl	**UJ**
GM-58A-1113	SVOCs	2,4-Dichlorophenol	**UJ**
GM-58A-1113	SVOCs	Nitrobenzene	**UJ**
GM-58A-1113	SVOCs	2,4,6-Trichlorophenol	**UJ**
GM-31A-1113	SVOCs	1,1'-Biphenyl	**UJ**
GM-31A-1113	SVOCs	2,4-Dichlorophenol	**UJ**
GM-31A-1113	SVOCs	Nitrobenzene	**J**
GM-31A-1113	SVOCs	2,4,6-Trichlorophenol	**J**
GM-31A-1113-AD	SVOCs	1,1'-Biphenyl	**UJ**
GM-31A-1113-AD	SVOCs	2,4-Dichlorophenol	**UJ**
GM-31A-1113-AD	SVOCs	Nitrobenzene	**J**
GM-31A-1113-AD	SVOCs	2,4,6-Trichlorophenol	**J**

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for two investigative samples, meeting the work plan frequency requirement.

Sample GM-58A-1113 was spiked and analyzed for SVOCs, and although not requested, nitrate and sulfate. Sample GM-31A-F(0.2)-1113 was spiked and analyzed for dissolved metals, and sample GM-58A-F(0.2)-1113 was spiked and analyzed for dissolved organic carbon .All MS/MSD recoveries were within evaluation criteria, with the exception summarized in the following table:

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
GM-58A-1113	General chemistry	Nitrate	**80/83**	1	90-110/10

MS/MSD recoveries for sulfate could not be evaluated in sample GM-58A-1113 because sample concentrations were greater than four times (4X) the matrix spike concentration. The MS/MSD recoveries for inorganic compounds with sample concentrations greater than four times (4X) the

matrix spike concentration did not require evaluation or qualification. Analytical data that required qualification based on MS/MSD data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
GM-58A-1113	General chemistry	Nitrate	**J**

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within 2 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One field duplicate sample was collected for the two investigative samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Groundwater field duplicate RPDs were within evaluation criteria. No qualification of data was required.

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent for SVOCs. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time.

The internal standards area responses for the SVOCs were verified for the data reviews. IS responses met the criteria. No qualification of data was required.

9.0 RESULTS REPORTED FROM DILUTIONS

Sample GM-58A-1113 was diluted due to high levels of sulfate and nitrate, and field duplicate pair GM-31A-1113/GM-31A-1113-AD was diluted due to high levels of SVOCs and sulfate. The diluted sample results for nitrate and sulfate were reported at the lowest possible reporting limit.

10.0 ADDITIONAL QUALIFICATIONS

The following samples are qualified, as summarized below, due to pH that was out of range in these samples upon receipt.

Sample ID	Parameter	Analyte	Qualification
GM-31A-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**

Appendix D

Groundwater Analytical Results
(with Data Review Reports)

Solutia Krummrich Data Review
Illinois Route 3 Drum Site 4Q13

Laboratory SDG: KOM022

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/19/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008.USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Applicable Work Plan: Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia 2008)

Sample Identification	
GM-58A-1113	GM-58A-F(0.2)-1113
GM-31A-1113	GM-31A-F(0.2)-1113
GM-31A-1113-AD	GM-31A-1113-EB

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated SVOC LCS recoveries, and SVOC LCS/LCSD RPDs were outside evaluation criteria. Nitrate MS/MSD recoveries were outside evaluation criteria for sample GM-58A-1113. MS/MSD recoveries for sulfate could not be evaluated in sample GM-58A-1113 because sample concentrations were greater than four times (4X) the matrix spike concentration. SVOC LCS surrogate recoveries were outside evaluation criteria. Sample GM-58A-0812 was diluted due to high levels of sulfate and nitrate, and field duplicate pair GM-31A-1113/GM-31A-1113-AD was diluted due to high levels of SVOCs and sulfate. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of two coolers was received by the laboratory at a temperature of 1.0°C which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The pH for dissolved organic carbon in sample GM-31A-F(0.2)-1113 was out of range upon receipt; please see section 12.0 of this review for qualifications.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	LCS/ LCSD RPD	LCS/LCSD /RPD Criteria
LCS 680-301653/21/22-A	SVOCs	1,1'-Biphenyl	**11**/76	**149**	54-130/50
LCS 680-301653/21/22-A	SVOCs	2,4-Dichlorophenol	**5**/83	**179**	54-130/50
LCS 680-301653/21/22-A	SVOCs	Nitrobenzene	**4**/83	**184**	56-130/50
LCS 680-301653/21/22-A	SVOCs	2,4,6-Trichlorophenol	**16**/86	**137**	57-130/50

Analytical data that required qualification based on LCS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
GM-58A-1113	SVOCs	1,1'-Biphenyl	**UJ**
GM-58A-1113	SVOCs	2,4-Dichlorophenol	**UJ**
GM-58A-1113	SVOCs	Nitrobenzene	**UJ**
GM-58A-1113	SVOCs	2,4,6-Trichlorophenol	**UJ**
GM-31A-1113	SVOCs	1,1'-Biphenyl	**UJ**
GM-31A-1113	SVOCs	2,4-Dichlorophenol	**UJ**
GM-31A-1113	SVOCs	Nitrobenzene	**J**
GM-31A-1113	SVOCs	2,4,6-Trichlorophenol	**J**
GM-31A-1113-AD	SVOCs	1,1'-Biphenyl	**UJ**
GM-31A-1113-AD	SVOCs	2,4-Dichlorophenol	**UJ**
GM-31A-1113-AD	SVOCs	Nitrobenzene	**J**
GM-31A-1113-AD	SVOCs	2,4,6-Trichlorophenol	**J**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery	Criteria
LCS 680-301653/21-A	SVOCs	2-Fluorobiphenyl	**9**	38-130
LCS 680-301653/21-A	SVOCs	2-Fluorophenol	**3**	25-130
LCS 680-301653/21-A	SVOCs	Nitrobenzene-d_5	**3**	39-130

Sample ID	Parameter	Surrogate	Recovery	Criteria
LCS 680-301653/21-A	SVOCs	Phenol-d_5	**5**	25-130

LCS sample 680-30653/21-A is a quality control sample and is not qualified. No qualification of data was required.

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample GM-58A-1113 was spiked and analyzed for SVOCs, and although not requested, nitrate and sulfate. Sample GM-31A-F(0.2)-1113 was spiked and analyzed for dissolved metals, and sample GM-58A-F(0.2)-1113 was spiked and analyzed for dissolved organic carbon.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
GM-58A-1113	General chemistry	Nitrate	**80/83**	1	90-110/10

Analytical data that required qualification based on MS/MSD data are included in the table below. MS/MSD recoveries for sulfate could not be evaluated in sample GM-58A-1113 because sample concentrations were greater than four times (4X) the matrix spike concentration. The MS/MSD recoveries for inorganic compounds with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification.

Sample ID	Parameter	Analyte	Qualification
GM-58A-1113	General chemistry	Nitrate	**J**

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples performed as part of this SDG?

Yes, sample GM-31A-1113 was duplicated and analyzed for sulfate.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
GM-31A-1113	GM-31A-1113-AD

Were field duplicate sample RPDs within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

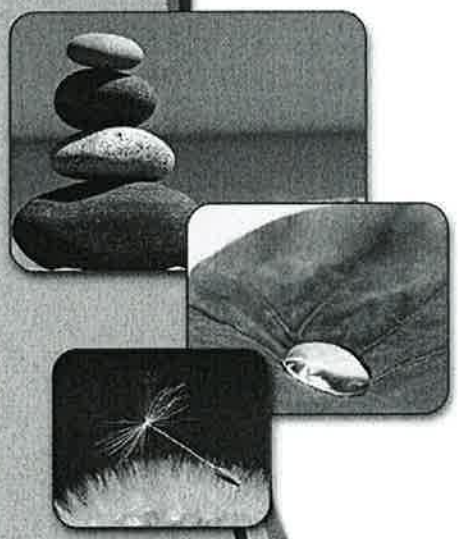
Yes, the following samples are qualified, as summarized below, due to pH that was out of range in these samples upon receipt.

Sample ID	Parameter	Analyte	Qualification
GM-31A-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**

SDG KOM022

Results of Samples from Monitoring Wells:

GM-31A
GM-58A



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-95758-1
TestAmerica Sample Delivery Group: KOMO22
Client Project/Site: WGK Route 3 GW Sampling 4Q13

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/26/2013 2:14:13 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on DEC 19 2013 MK

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits
X	Surrogate is outside control limits

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

DEC 19 2013

TestAmerica Savannah

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-95758-1	GM-58A-1113	Water	11/01/13 10:00	11/02/13 08:48
680-95758-2	GM-58A-F(0.2)-1113	Water	11/01/13 10:00	11/02/13 08:48
680-95758-3	GM-31A-1113	Water	11/01/13 11:50	11/02/13 08:48
680-95758-4	GM-31A-F(0.2)1113	Water	11/01/13 11:50	11/02/13 08:48
680-95758-5	GM-31A-1113-AD	Water	11/01/13 11:50	11/02/13 08:48
680-95758-6	GM-31A-1113-EB	Water	11/01/13 12:20	11/02/13 08:48

DEC 19 2013
TestAmerica Savannah

Job ID: 680-95758-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Route 3 GW Sampling 4Q13

Report Number: 680-95758-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/2/2013 8:48 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 2.6° C.

Except:

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials, however, the pH was outside the required criteria when verified by the laboratory: GWGM-86B (10/30/13) (680-95671-1).

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials, however, the pH was outside the required criteria when verified by the laboratory: (680-95803-6 DU), BSA-MW-5D-F(0.2)-1113 (680-95803-6), GM-31A-F(0.2)1113 (680-95758-4).

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples GM-58A-1113 (680-95758-1), GM-31A-1113 (680-95758-3), GM-31A-1113-AD (680-95758-5) and GM-31A-1113-EB (680-95758-6) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 11/05/2013 and analyzed on 11/22/2013 and 11/24/2013.

The laboratory control sample (LCS) and / or the laboratory control sample duplicate (LCSD) for batch 301653 recovered outside control limits for multiple analytes. The LCSD recovered within control limits; therefore, the samples have been addressed and reported.

Samples GM-31A-1113 (680-95758-3)[2X] and GM-31A-1113-AD (680-95758-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

DISSOLVED GASES

Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/04/2013.

No difficulties were encountered during the dissolved gases analysis.

DEC 19 2013

TestAmerica Savannah

Job ID: 680-95758-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples GM-58A-F(0.2)-1113 (680-95758-2) and GM-31A-F(0.2)1113 (680-95758-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/04/2013 and analyzed on 11/05/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/04/2013 and analyzed on 11/05/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/11/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/02/2013.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 301404 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria
Refer to the QC report for details.

Sample GM-58A-1113 (680-95758-1)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

SULFATE
Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/06/2013.

Samples GM-58A-1113 (680-95758-1)[10X] and GM-31A-1113 (680-95758-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Job ID: 680-95758-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No other difficulties were encountered during the sulfate analysis.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON

Samples GM-58A-1113 (680-95758-1) and GM-31A-1113 (680-95758-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/06/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED ORGANIC CARBON (DOC)

Samples GM-58A-F(0.2)-1113 (680-95758-2) and GM-31A-F(0.2)1113 (680-95758-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-58A-1113
Date Collected: 11/01/13 10:00
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	9.6	U * UJ	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
1-chloro-2,4-dinitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
1-Chloro-3-nitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
2-chloronitrobenzene / 4-chloronitrobenzene	**30**		19		ug/L		11/05/13 15:56	11/22/13 19:12	1
3,4-Dichloronitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
2,4-Dichlorophenol	9.6	U * UJ	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
Nitrobenzene	9.6	U * UJ	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
2-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
3-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
4-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1
Pentachlorophenol	48	U	48		ug/L		11/05/13 15:56	11/22/13 19:12	1
2,4,6-Trichlorophenol	9.6	U * UJ	9.6		ug/L		11/05/13 15:56	11/22/13 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*73*		*38 - 130*	*11/05/13 15:56*	*11/22/13 19:12*	*1*
2-Fluorophenol	*63*		*25 - 130*	*11/05/13 15:56*	*11/22/13 19:12*	*1*
Nitrobenzene-d5	*72*		*39 - 130*	*11/05/13 15:56*	*11/22/13 19:12*	*1*
Phenol-d5	*65*		*25 - 130*	*11/05/13 15:56*	*11/22/13 19:12*	*1*
Terphenyl-d14	*45*		*10 - 143*	*11/05/13 15:56*	*11/22/13 19:12*	*1*
2,4,6-Tribromophenol	*91*		*31 - 141*	*11/05/13 15:56*	*11/22/13 19:12*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/04/13 11:36	1
Ethylene	1.0	U	1.0		ug/L			11/04/13 11:36	1
Methane	**0.95**		0.58		ug/L			11/04/13 11:36	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.077**		0.050		mg/L		11/04/13 13:24	11/05/13 20:37	1
Manganese	**1.2**		0.010		mg/L		11/04/13 13:24	11/05/13 20:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40**		1.0		mg/L			11/13/13 14:25	1
Nitrate as N	**1.9**	J	0.10		mg/L			11/02/13 14:58	2
Sulfate	**210**		50		mg/L			11/06/13 11:48	10
Total Organic Carbon	**3.1**		1.0		mg/L			11/06/13 10:49	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			11/11/13 11:09	1
Carbon Dioxide, Free	**32**		5.0		mg/L			11/11/13 11:09	1

DEC 19 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-58A-F(0.2)-1113
Date Collected: 11/01/13 10:00
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		11/04/13 13:24	11/05/13 20:42	1
Manganese, Dissolved	**1.2**		0.010		mg/L		11/04/13 13:24	11/05/13 20:42	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	**3.1**		1.0		mg/L			11/13/13 15:02	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-31A-1113
Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-3
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	19	U * UJ	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
1-chloro-2,4-dinitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
1-Chloro-3-nitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
2-chloronitrobenzene / 4-chloronitrobenzene	**54**		39		ug/L		11/05/13 15:56	11/24/13 10:23	2
3,4-Dichloronitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
2,4-Dichlorophenol	19	U * UJ	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
Nitrobenzene	**20**	* J	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
2-Nitrobiphenyl	**48**		19		ug/L		11/05/13 15:56	11/24/13 10:23	2
3-Nitrobiphenyl	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
4-Nitrobiphenyl	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:23	2
Pentachlorophenol	97	U	97		ug/L		11/05/13 15:56	11/24/13 10:23	2
2,4,6-Trichlorophenol	**230**	* J	19		ug/L		11/05/13 15:56	11/24/13 10:23	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*38 - 130*	*11/05/13 15:56*	*11/24/13 10:23*	*2*
2-Fluorophenol	*66*		*25 - 130*	*11/05/13 15:56*	*11/24/13 10:23*	*2*
Nitrobenzene-d5	*77*		*39 - 130*	*11/05/13 15:56*	*11/24/13 10:23*	*2*
Phenol-d5	*72*		*25 - 130*	*11/05/13 15:56*	*11/24/13 10:23*	*2*
Terphenyl-d14	*46*		*10 - 143*	*11/05/13 15:56*	*11/24/13 10:23*	*2*
2,4,6-Tribromophenol	*97*		*31 - 141*	*11/05/13 15:56*	*11/24/13 10:23*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/04/13 11:24	1
Ethylene	1.0	U	1.0		ug/L			11/04/13 11:24	1
Methane	**46**		0.58		ug/L			11/04/13 11:24	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.38**		0.050		mg/L		11/04/13 13:24	11/05/13 20:46	1
Manganese	**1.9**		0.010		mg/L		11/04/13 13:24	11/05/13 20:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51**		1.0		mg/L			11/13/13 14:25	1
Nitrate as N	**0.89**		0.050		mg/L			11/02/13 14:54	1
Sulfate	**230**		50		mg/L			11/06/13 11:50	10
Total Organic Carbon	**5.4**		1.0		mg/L			11/06/13 11:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**440**		5.0		mg/L			11/11/13 12:04	1
Carbon Dioxide, Free	**45**		5.0		mg/L			11/11/13 12:04	1

DEC 19 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-31A-F(0.2)1113
Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		11/04/13 13:24	11/05/13 20:51	1
Manganese, Dissolved	**2.0**		0.010		mg/L		11/04/13 13:24	11/05/13 20:51	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	**5.6**	J	1.0		mg/L			11/13/13 15:44	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-31A-1113-AD
Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-5
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	19	U *	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
1-chloro-2,4-dinitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
1-Chloro-3-nitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
2-chloronitrobenzene / 4-chloronitrobenzene	**55**		38		ug/L		11/05/13 15:56	11/24/13 10:46	2
3,4-Dichloronitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
2,4-Dichlorophenol	19	U *	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
Nitrobenzene	**20**	*	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
2-Nitrobiphenyl	**52**		19		ug/L		11/05/13 15:56	11/24/13 10:46	2
3-Nitrobiphenyl	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
4-Nitrobiphenyl	19	U	19		ug/L		11/05/13 15:56	11/24/13 10:46	2
Pentachlorophenol	95	U	95		ug/L		11/05/13 15:56	11/24/13 10:46	2
2,4,6-Trichlorophenol	**230**	*	19		ug/L		11/05/13 15:56	11/24/13 10:46	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*38 - 130*	*11/05/13 15:56*	*11/24/13 10:46*	*2*
2-Fluorophenol	*61*		*25 - 130*	*11/05/13 15:56*	*11/24/13 10:46*	*2*
Nitrobenzene-d5	*77*		*39 - 130*	*11/05/13 15:56*	*11/24/13 10:46*	*2*
Phenol-d5	*63*		*25 - 130*	*11/05/13 15:56*	*11/24/13 10:46*	*2*
Terphenyl-d14	*26*		*10 - 143*	*11/05/13 15:56*	*11/24/13 10:46*	*2*
2,4,6-Tribromophenol	*88*		*31 - 141*	*11/05/13 15:56*	*11/24/13 10:46*	*2*

DEC 19 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-31A-1113-EB
Date Collected: 11/01/13 12:20
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-6
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	9.6	U *	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
1-chloro-2,4-dinitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
1-Chloro-3-nitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
2-chloronitrobenzene / 4-chloronitrobenzene	19	U	19		ug/L		11/05/13 15:56	11/22/13 20:22	1
3,4-Dichloronitrobenzene	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
2,4-Dichlorophenol	9.6	U *	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
Nitrobenzene	9.6	U *	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
2-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
3-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
4-Nitrobiphenyl	9.6	U	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1
Pentachlorophenol	48	U	48		ug/L		11/05/13 15:56	11/22/13 20:22	1
2,4,6-Trichlorophenol	9.6	U *	9.6		ug/L		11/05/13 15:56	11/22/13 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*44*		*38 - 130*	*11/05/13 15:56*	*11/22/13 20:22*	*1*
2-Fluorophenol	*39*		*25 - 130*	*11/05/13 15:56*	*11/22/13 20:22*	*1*
Nitrobenzene-d5	*48*		*39 - 130*	*11/05/13 15:56*	*11/22/13 20:22*	*1*
Phenol-d5	*39*		*25 - 130*	*11/05/13 15:56*	*11/22/13 20:22*	*1*
Terphenyl-d14	*57*		*10 - 143*	*11/05/13 15:56*	*11/22/13 20:22*	*1*
2,4,6-Tribromophenol	*49*		*31 - 141*	*11/05/13 15:56*	*11/22/13 20:22*	*1*

DEC 19 2013

TestAmerica Savannah

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-301653/20-A
Matrix: Water
Analysis Batch: 302647

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
1-chloro-2,4-dinitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
1-Chloro-3-nitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
2-chloronitrobenzene / 4-chloronitrobenzene	20	U	20		ug/L		11/05/13 15:56	11/11/13 21:49	1
3,4-Dichloronitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
2,4-Dichlorophenol	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
Nitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
2-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
3-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
4-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1
Pentachlorophenol	50	U	50		ug/L		11/05/13 15:56	11/11/13 21:49	1
2,4,6-Trichlorophenol	10	U	10		ug/L		11/05/13 15:56	11/11/13 21:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*38 - 130*	*11/05/13 15:56*	*11/11/13 21:49*	*1*
2-Fluorophenol	*69*		*25 - 130*	*11/05/13 15:56*	*11/11/13 21:49*	*1*
Nitrobenzene-d5	*84*		*39 - 130*	*11/05/13 15:56*	*11/11/13 21:49*	*1*
Phenol-d5	*68*		*25 - 130*	*11/05/13 15:56*	*11/11/13 21:49*	*1*
Terphenyl-d14	*86*		*10 - 143*	*11/05/13 15:56*	*11/11/13 21:49*	*1*
2,4,6-Tribromophenol	*81*		*31 - 141*	*11/05/13 15:56*	*11/11/13 21:49*	*1*

Lab Sample ID: MB 680-301653/20-A
Matrix: Water
Analysis Batch: 304655

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
1-chloro-2,4-dinitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
1-Chloro-3-nitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
2-chloronitrobenzene / 4-chloronitrobenzene	20	U	20		ug/L		11/05/13 15:56	11/22/13 18:25	1
3,4-Dichloronitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
2,4-Dichlorophenol	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
Nitrobenzene	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
2-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
3-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
4-Nitrobiphenyl	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1
Pentachlorophenol	50	U	50		ug/L		11/05/13 15:56	11/22/13 18:25	1
2,4,6-Trichlorophenol	10	U	10		ug/L		11/05/13 15:56	11/22/13 18:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*38 - 130*	*11/05/13 15:56*	*11/22/13 18:25*	*1*
2-Fluorophenol	*72*		*25 - 130*	*11/05/13 15:56*	*11/22/13 18:25*	*1*
Nitrobenzene-d5	*78*		*39 - 130*	*11/05/13 15:56*	*11/22/13 18:25*	*1*
Phenol-d5	*74*		*25 - 130*	*11/05/13 15:56*	*11/22/13 18:25*	*1*
Terphenyl-d14	*91*		*10 - 143*	*11/05/13 15:56*	*11/22/13 18:25*	*1*
2,4,6-Tribromophenol	*94*		*31 - 141*	*11/05/13 15:56*	*11/22/13 18:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-301653/21-A
Matrix: Water
Analysis Batch: 302647

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	100	11.2	*	ug/L		11	54 - 130
2,4-Dichlorophenol	100	10 U	*	ug/L		5	54 - 130
Nitrobenzene	100	10 U	*	ug/L		4	56 - 130
Pentachlorophenol	100	59.5		ug/L		59	42 - 138
2,4,6-Trichlorophenol	100	16.1	*	ug/L		16	57 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*9*	*X*	*38 - 130*
2-Fluorophenol	*3*	*X*	*25 - 130*
Nitrobenzene-d5	*3*	*X*	*39 - 130*
Phenol-d5	*5*	*X*	*25 - 130*
Terphenyl-d14	*65*		*10 - 143*
2,4,6-Tribromophenol	*45*		*31 - 141*

Lab Sample ID: LCS 680-301653/25-A
Matrix: Water
Analysis Batch: 304655

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-chloro-2,4-dinitrobenzene	100	91.5		ug/L		92	10 - 130
1-Chloro-3-nitrobenzene	100	87.0		ug/L		87	10 - 130
2-chloronitrobenzene / 4-chloronitrobenzene	200	176		ug/L		88	10 - 130
3,4-Dichloronitrobenzene	100	85.9		ug/L		86	10 - 130
2-Nitrobiphenyl	100	85.4		ug/L		85	10 - 130
3-Nitrobiphenyl	100	90.7		ug/L		91	10 - 130
4-Nitrobiphenyl	100	90.0		ug/L		90	10 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*67*		*38 - 130*
2-Fluorophenol	*73*		*25 - 130*
Nitrobenzene-d5	*83*		*39 - 130*
Phenol-d5	*77*		*25 - 130*
Terphenyl-d14	*84*		*10 - 143*
2,4,6-Tribromophenol	*78*		*31 - 141*

Lab Sample ID: LCSD 680-301653/22-A
Matrix: Water
Analysis Batch: 302647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301653

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	100	76.5	*	ug/L		76	54 - 130	149	50
2,4-Dichlorophenol	100	83.2	*	ug/L		83	54 - 130	179	50
Nitrobenzene	100	83.2	*	ug/L		83	56 - 130	184	50
Pentachlorophenol	100	81.2		ug/L		81	42 - 138	31	50
2,4,6-Trichlorophenol	100	86.3	*	ug/L		86	57 - 130	137	50

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Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-301653/22-A
Matrix: Water
Analysis Batch: 302647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301653

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	75		38 - 130
2-Fluorophenol	64		25 - 130
Nitrobenzene-d5	80		39 - 130
Phenol-d5	61		25 - 130
Terphenyl-d14	78		10 - 143
2,4,6-Tribromophenol	81		31 - 141

Lab Sample ID: 680-95758-1 MS
Matrix: Water
Analysis Batch: 304655

Client Sample ID: GM-58A-1113-MS
Prep Type: Total/NA
Prep Batch: 301653

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1-chloro-2,4-dinitrobenzene	9.6	U	95.4	94.0		ug/L		98	10 - 130
1-Chloro-3-nitrobenzene	9.6	U	95.4	55.2		ug/L		58	10 - 130
2-chloronitrobenzene / 4-chloronitrobenzene	30		191	173		ug/L		75	10 - 130
3,4-Dichloronitrobenzene	9.6	U	95.4	62.8		ug/L		66	10 - 130
2-Nitrobiphenyl	9.6	U	95.4	76.1		ug/L		74	10 - 130
3-Nitrobiphenyl	9.6	U	95.4	68.6		ug/L		72	10 - 130
4-Nitrobiphenyl	9.6	U	95.4	66.6		ug/L		70	10 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	54		38 - 130
2-Fluorophenol	47		25 - 130
Nitrobenzene-d5	59		39 - 130
Phenol-d5	46		25 - 130
Terphenyl-d14	27		10 - 143
2,4,6-Tribromophenol	67		31 - 141

Lab Sample ID: 680-95758-1 MSD
Matrix: Water
Analysis Batch: 304655

Client Sample ID: GM-58A-1113-MSD
Prep Type: Total/NA
Prep Batch: 301653

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-chloro-2,4-dinitrobenzene	9.6	U	95.1	100		ug/L		105	10 - 130	6	50
1-Chloro-3-nitrobenzene	9.6	U	95.1	69.4		ug/L		73	10 - 130	23	50
2-chloronitrobenzene / 4-chloronitrobenzene	30		190	201		ug/L		90	10 - 130	15	50
3,4-Dichloronitrobenzene	9.6	U	95.1	70.3		ug/L		74	10 - 130	11	50
2-Nitrobiphenyl	9.6	U	95.1	82.0		ug/L		81	10 - 130	7	50
3-Nitrobiphenyl	9.6	U	95.1	79.5		ug/L		84	10 - 130	15	50
4-Nitrobiphenyl	9.6	U	95.1	75.3		ug/L		79	10 - 130	12	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	63		38 - 130
2-Fluorophenol	60		25 - 130
Nitrobenzene-d5	72		39 - 130
Phenol-d5	60		25 - 130

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Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-95758-1 MSD
Matrix: Water
Analysis Batch: 304655

Client Sample ID: GM-58A-1113-MSD
Prep Type: Total/NA
Prep Batch: 301653

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	*34*		*10 - 143*
2,4,6-Tribromophenol	*75*		*31 - 141*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-301455/3
Matrix: Water
Analysis Batch: 301455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/04/13 10:20	1
Ethylene	1.0	U	1.0		ug/L			11/04/13 10:20	1
Methane	0.58	U	0.58		ug/L			11/04/13 10:20	1
Methane (TCD)	0.58	U	0.58		ug/L			11/04/13 10:20	1

Lab Sample ID: LCS 680-301455/4
Matrix: Water
Analysis Batch: 301455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	298		ug/L		103	75 - 125
Ethylene	269	280		ug/L		104	75 - 125
Methane	154	150		ug/L		98	75 - 125

Lab Sample ID: LCS 680-301455/7
Matrix: Water
Analysis Batch: 301455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	2080		ug/L		108	75 - 125

Lab Sample ID: LCSD 680-301455/28
Matrix: Water
Analysis Batch: 301455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2000		ug/L		104	75 - 125	4	30

Lab Sample ID: LCSD 680-301455/5
Matrix: Water
Analysis Batch: 301455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	295		ug/L		102	75 - 125	1	30
Ethylene	269	274		ug/L		102	75 - 125	2	30
Methane	154	149		ug/L		97	75 - 125	0	30

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Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-301551/1-A
Matrix: Water
Analysis Batch: 301794

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 301551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/04/13 13:24	11/05/13 19:05	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/04/13 13:24	11/05/13 19:05	1
Manganese	0.010	U	0.010		mg/L		11/04/13 13:24	11/05/13 19:05	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/04/13 13:24	11/05/13 19:05	1

Lab Sample ID: LCS 680-301551/2-A
Matrix: Water
Analysis Batch: 301794

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 301551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.00		mg/L		100	75 - 125
Iron, Dissolved	5.00	5.00		mg/L		100	75 - 125
Manganese	0.500	0.512		mg/L		102	75 - 125
Manganese, Dissolved	0.500	0.512		mg/L		102	75 - 125

Lab Sample ID: 680-95758-4 MS
Matrix: Water
Analysis Batch: 301794

Client Sample ID: GM-31A-F(0.2)1113
Prep Type: Dissolved
Prep Batch: 301551

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.050		5.00	5.10		mg/L		101	75 - 125
Iron, Dissolved	0.050	U	5.00	5.10		mg/L		101	75 - 125
Manganese	2.0		0.500	2.60		mg/L		125	75 - 125
Manganese, Dissolved	2.0		0.500	2.60		mg/L		125	75 - 125

Lab Sample ID: 680-95758-4 MSD
Matrix: Water
Analysis Batch: 301794

Client Sample ID: GM-31A-F(0.2)1113
Prep Type: Dissolved
Prep Batch: 301551

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.050		5.00	5.00		mg/L		99	75 - 125	2	20
Iron, Dissolved	0.050	U	5.00	5.00		mg/L		99	75 - 125	2	20
Manganese	2.0		0.500	2.52		mg/L		108	75 - 125	3	20
Manganese, Dissolved	2.0		0.500	2.52		mg/L		108	75 - 125	3	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-302637/5
Matrix: Water
Analysis Batch: 302637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/11/13 09:59	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/11/13 09:59	1

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Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCS 680-302637/6
Matrix: Water
Analysis Batch: 302637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	203		mg/L		81	80 - 120

Lab Sample ID: LCSD 680-302637/27
Matrix: Water
Analysis Batch: 302637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	214		mg/L		86	80 - 120	5	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-303122/21
Matrix: Water
Analysis Batch: 303122

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303122/22
Matrix: Water
Analysis Batch: 303122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.9		mg/L		100	85 - 115

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-301404/14
Matrix: Water
Analysis Batch: 301404

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/02/13 14:47	1

Lab Sample ID: LCS 680-301404/13
Matrix: Water
Analysis Batch: 301404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.523		mg/L		105	90 - 110
Nitrate Nitrite as N	0.997	1.03		mg/L		103	90 - 110
Nitrite as N	0.500	0.508		mg/L		101	90 - 110

Lab Sample ID: 680-95758-1 MS
Matrix: Water
Analysis Batch: 301404

Client Sample ID: GM-58A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.9		0.497	2.29	F	mg/L		80	90 - 110

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Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-95758-1 MS
Matrix: Water
Analysis Batch: 301404

Client Sample ID: GM-58A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.9		0.997	2.80		mg/L		90	90 - 110
Nitrite as N	0.10		0.500	0.514		mg/L		103	90 - 110

Lab Sample ID: 680-95758-1 MSD
Matrix: Water
Analysis Batch: 301404

Client Sample ID: GM-58A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	1.9		0.497	2.30	F	mg/L		83	90 - 110	1	10
Nitrate Nitrite as N	1.9		0.997	2.82		mg/L		91	90 - 110	1	10
Nitrite as N	0.10		0.500	0.517		mg/L		103	90 - 110	1	10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-301979/39
Matrix: Water
Analysis Batch: 301979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/06/13 14:28	1

Lab Sample ID: LCS 680-301979/7
Matrix: Water
Analysis Batch: 301979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

Lab Sample ID: 680-95758-1 MS
Matrix: Water
Analysis Batch: 301979

Client Sample ID: GM-58A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	210		20.0	231	4	mg/L		100	75 - 125

Lab Sample ID: 680-95758-1 MSD
Matrix: Water
Analysis Batch: 301979

Client Sample ID: GM-58A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	210		20.0	231	4	mg/L		101	75 - 125	0	30

Lab Sample ID: 680-95758-3 DU
Matrix: Water
Analysis Batch: 301979

Client Sample ID: GM-31A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	230		230		mg/L		2	30

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Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Lab Sample ID: 680-95758-2 MS
Matrix: Water
Analysis Batch: 303261

Client Sample ID: GM-58A-F(0.2)-1113
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	3.1		20.0	22.5		mg/L		97	80 - 120

Lab Sample ID: 680-95758-2 MSD
Matrix: Water
Analysis Batch: 303261

Client Sample ID: GM-58A-F(0.2)-1113
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	3.1		20.0	21.9		mg/L		94	80 - 120	3	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-301982/2
Matrix: Water
Analysis Batch: 301982

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/06/13 04:06	1

Lab Sample ID: LCS 680-301982/3
Matrix: Water
Analysis Batch: 301982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.1		mg/L		101	80 - 120

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QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

GC/MS Semi VOA

Prep Batch: 301653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	3520C	
680-95758-1 MS	GM-58A-1113-MS	Total/NA	Water	3520C	
680-95758-1 MSD	GM-58A-1113-MSD	Total/NA	Water	3520C	
680-95758-3	GM-31A-1113	Total/NA	Water	3520C	
680-95758-5	GM-31A-1113-AD	Total/NA	Water	3520C	
680-95758-6	GM-31A-1113-EB	Total/NA	Water	3520C	
LCS 680-301653/21-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-301653/25-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-301653/22-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-301653/20-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 302647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-301653/21-A	Lab Control Sample	Total/NA	Water	8270D	301653
LCSD 680-301653/22-A	Lab Control Sample Dup	Total/NA	Water	8270D	301653
MB 680-301653/20-A	Method Blank	Total/NA	Water	8270D	301653

Analysis Batch: 304655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	8270D	301653
680-95758-1 MS	GM-58A-1113-MS	Total/NA	Water	8270D	301653
680-95758-1 MSD	GM-58A-1113-MSD	Total/NA	Water	8270D	301653
680-95758-6	GM-31A-1113-EB	Total/NA	Water	8270D	301653
LCS 680-301653/25-A	Lab Control Sample	Total/NA	Water	8270D	301653
MB 680-301653/20-A	Method Blank	Total/NA	Water	8270D	301653

Analysis Batch: 304799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-3	GM-31A-1113	Total/NA	Water	8270D	301653
680-95758-5	GM-31A-1113-AD	Total/NA	Water	8270D	301653

GC VOA

Analysis Batch: 301455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	RSK-175	
680-95758-3	GM-31A-1113	Total/NA	Water	RSK-175	
LCS 680-301455/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-301455/7	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-301455/28	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-301455/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-301455/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 301551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total Recoverable	Water	3005A	
680-95758-2	GM-58A-F(0.2)-1113	Dissolved	Water	3005A	
680-95758-3	GM-31A-1113	Total Recoverable	Water	3005A	

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Metals (Continued)

Prep Batch: 301551 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-4	GM-31A-F(0.2)1113	Dissolved	Water	3005A	
680-95758-4 MS	GM-31A-F(0.2)1113	Dissolved	Water	3005A	
680-95758-4 MSD	GM-31A-F(0.2)1113	Dissolved	Water	3005A	
LCS 680-301551/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-301551/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 301794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total Recoverable	Water	6010C	301551
680-95758-2	GM-58A-F(0.2)-1113	Dissolved	Water	6010C	301551
680-95758-3	GM-31A-1113	Total Recoverable	Water	6010C	301551
680-95758-4	GM-31A-F(0.2)1113	Dissolved	Water	6010C	301551
680-95758-4 MS	GM-31A-F(0.2)1113	Dissolved	Water	6010C	301551
680-95758-4 MSD	GM-31A-F(0.2)1113	Dissolved	Water	6010C	301551
LCS 680-301551/2-A	Lab Control Sample	Total Recoverable	Water	6010C	301551
MB 680-301551/1-A	Method Blank	Total Recoverable	Water	6010C	301551

General Chemistry

Analysis Batch: 301404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	353.2	
680-95758-1 MS	GM-58A-1113	Total/NA	Water	353.2	
680-95758-1 MSD	GM-58A-1113	Total/NA	Water	353.2	
680-95758-3	GM-31A-1113	Total/NA	Water	353.2	
LCS 680-301404/13	Lab Control Sample	Total/NA	Water	353.2	
MB 680-301404/14	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 301979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	375.4	
680-95758-1 MS	GM-58A-1113	Total/NA	Water	375.4	
680-95758-1 MSD	GM-58A-1113	Total/NA	Water	375.4	
680-95758-3	GM-31A-1113	Total/NA	Water	375.4	
680-95758-3 DU	GM-31A-1113	Total/NA	Water	375.4	
LCS 680-301979/7	Lab Control Sample	Total/NA	Water	375.4	
MB 680-301979/39	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 301982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	415.1	
680-95758-3	GM-31A-1113	Total/NA	Water	415.1	
LCS 680-301982/3	Lab Control Sample	Total/NA	Water	415.1	
MB 680-301982/2	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 302637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	310.1	
680-95758-3	GM-31A-1113	Total/NA	Water	310.1	
LCS 680-302637/6	Lab Control Sample	Total/NA	Water	310.1	

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General Chemistry (Continued)

Analysis Batch: 302637 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-302637/27	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-302637/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 303122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-1	GM-58A-1113	Total/NA	Water	325.2	
680-95758-3	GM-31A-1113	Total/NA	Water	325.2	
LCS 680-303122/22	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303122/21	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95758-2	GM-58A-F(0.2)-1113	Dissolved	Water	415.1	
680-95758-2 MS	GM-58A-F(0.2)-1113	Dissolved	Water	415.1	
680-95758-2 MSD	GM-58A-F(0.2)-1113	Dissolved	Water	415.1	
680-95758-4	GM-31A-F(0.2)1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-58A-1113

Date Collected: 11/01/13 10:00
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1043.0 mL	1 mL	301653	11/05/13 15:56	RBS	TAL SAV
Total/NA	Analysis	8270D		1	1043.0 mL	1 mL	304655	11/22/13 19:12	JLW	TAL SAV
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	301455	11/04/13 11:36	AJMC	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	301551	11/04/13 13:24	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	301794	11/05/13 20:37	BCB	TAL SAV
Total/NA	Analysis	353.2		2	2 mL	2 mL	301404	11/02/13 14:58	CRW	TAL SAV
Total/NA	Analysis	375.4		10	2 mL	2 mL	301979	11/06/13 11:48	JME	TAL SAV
Total/NA	Analysis	415.1		1	25 mL	25 mL	301982	11/06/13 10:49	CMP	TAL SAV
Total/NA	Analysis	310.1		1			302637	11/11/13 11:09	LBH	TAL SAV
Total/NA	Analysis	325.2		1	2 mL	2 mL	303122	11/13/13 14:25	JME	TAL SAV

Client Sample ID: GM-58A-F(0.2)-1113

Date Collected: 11/01/13 10:00
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	301551	11/04/13 13:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	301794	11/05/13 20:42	BCB	TAL SAV
Dissolved	Analysis	415.1		1		25	303261	11/13/13 15:02	CMP	TAL SAV

Client Sample ID: GM-31A-1113

Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Lab Sample ID: 680-95758-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1032.2 mL	1 mL	301653	11/05/13 15:56	RBS	TAL SAV
Total/NA	Analysis	8270D		2	1032.2 mL	1 mL	304799	11/24/13 10:23	JLW	TAL SAV
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	301455	11/04/13 11:24	AJMC	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	301551	11/04/13 13:24	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	301794	11/05/13 20:46	BCB	TAL SAV
Total/NA	Analysis	353.2		1	2 mL	2 mL	301404	11/02/13 14:54	CRW	TAL SAV
Total/NA	Analysis	375.4		10	2 mL	2 mL	301979	11/06/13 11:50	JME	TAL SAV
Total/NA	Analysis	415.1		1	25 mL	25 mL	301982	11/06/13 11:03	CMP	TAL SAV
Total/NA	Analysis	310.1		1			302637	11/11/13 12:04	LBH	TAL SAV
Total/NA	Analysis	325.2		1	2 mL	2 mL	303122	11/13/13 14:25	JME	TAL SAV

DEC 19 2013

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Client Sample ID: GM-31A-F(0.2)1113

Lab Sample ID: 680-95758-4
Matrix: Water

Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	301551	11/04/13 13:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	301794	11/05/13 20:51	BCB	TAL SAV
Dissolved	Analysis	415.1		1		25	303261	11/13/13 15:44	CMP	TAL SAV

Client Sample ID: GM-31A-1113-AD

Lab Sample ID: 680-95758-5
Matrix: Water

Date Collected: 11/01/13 11:50
Date Received: 11/02/13 08:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1047.4 mL	1 mL	301653	11/05/13 15:56	RBS	TAL SAV
Total/NA	Analysis	8270D		2	1047.4 mL	1 mL	304799	11/24/13 10:46	JLW	TAL SAV

Client Sample ID: GM-31A-1113-EB

Lab Sample ID: 680-95758-6
Matrix: Water

Date Collected: 11/01/13 12:20
Date Received: 11/02/13 08:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1044.2 mL	1 mL	301653	11/05/13 15:56	RBS	TAL SAV
Total/NA	Analysis	8270D		1	1044.2 mL	1 mL	304655	11/22/13 20:22	JLW	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 19 2013

Certification Summary

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

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Method Summary

Client: Solutia Inc.
Project/Site: WGK Route 3 GW Sampling 4Q13

TestAmerica Job ID: 680-95758-1
SDG: KOMO22

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 19 2013

Serial Number 76235

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: Solutia WGK 4Q13	PROJECT NO.	PROJECT LOCATION (STATE): IL	PAGE 1 OF 1
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.	
CLIENT (SITE) PM: Bob Billman	CLIENT PHONE: 314-429-0100	CLIENT FAX	
CLIENT NAME: URS	CLIENT E-MAIL: bob.billman@urs.com		
CLIENT ADDRESS: 1001 Highlands Plaza Dr. W. Ste. 300 St. Louis, MO 63110			
COMPANY CONTRACTING THIS WORK (if applicable): Solutia			

STANDARD REPORT DELIVERY: X
DATE DUE:
EXPEDITED REPORT DELIVERY (SURCHARGE):
DATE DUE:
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	SVOC 8270C (Ice)	Total Fe/Mn 6010B (HNO3)	Alk/CO2 310.1 (Ice)	Chloride 325.2, Sulfate 375.4 (Ice)	Methane RSK 175 (HCl)	Nitrate 353.2 (H2SO4, Ice)	TOC 415.1 (HCl)	Dissolved Fe/Mn 6010B (HNO3)	DOC 415.1 (HCl)	REMARKS
								NUMBER OF CONTAINERS SUBMITTED									
11/01/13	1000	GM-58A-1113	G	X				2	1	1	1	3	2	1			
	1000	GM-58A-F(0.2)-1113	G	X											1	1	
	1000	GM-58A-1113-MS	G	X				2									
	1000	GM-58A-1113-MSD	G	X				2									
	1150	GM-31A-1113	G	X				2	1	1	1	3	2	1			
	1150	GM-31A-F(0.2)-1113	G	X											1	1	
	1150	GM-31A-1113-AD	G	X				2									
↓	1220	GM-31A-1113-EB	G	X				2									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	11/1/13	1300						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		TE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABOI
	11/02/13	0848			95758	

680-95758 Chain of Custody

1.0/2.6°C

TAL8240-680 (1008)

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Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-95758-1
SDG Number: KOMO22

Login Number: 95758
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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